

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 September 2010 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 60 is rejected under 35 U.S.C. 102(b) as being anticipated by Zhao et al. (US 6,423,764).

Regarding claim 60, Zhao discloses a bottle made of polyethylene terephthalate (C1/L30-35, C7/L25-30) comprising a poly(oxyalkene) polymeric colorant comprising

anthraquinone (C5/L30-35) (i.e. a disperse dye having a chemical affinity for polyethylene terephthalate; anthraquinone; a colored article comprising an additive having a chemical affinity for the article bound to at least the surface of the article). Given that Zhao discloses colorant that is anthraquinone as presently claimed, it is clear that the anthraquinone will inherently have chemical affinity for polyethylene terephthalate as presently claimed.

Although Zhao does not disclose an article produced by the process as claimed, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process and given that Zhao meets the requirements of the claimed product, Zhao clearly meet the requirements of present claim 60.

Given that the limitation “a specific region” encompasses (i.e. does not exclude) the entire container, it is the Examiner's position that Zhao meets any structural

limitations imparted by this process limitation since the colorant will be bound throughout the entire container.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 19, 20, 58 and 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luka et al. (6,393,803) in view of Zhao et al. (US 6,423,764).

Regarding claims 19, 20, 58 and 60, Luka discloses coating a container made of polyethylene terephthalate (C4/L6-7) on the exterior surface with a colorant (C3/L65-67). Luka does not specifically disclose that the colorant has a chemical affinity for polyethylene terephthalate.

Zhao discloses a bottle made of polyethylene terephthalate (C1/L30-35, C7/L25-30) comprising a poly(oxyalkene) polymeric colorant comprising anthraquinone (C5/L30-35) (i.e. a disperse dye having a chemical affinity for polyethylene terephthalate; anthraquinone). Zhao further discloses that the poly(oxyalkene) polymeric colorant comprising anthraquinone provides effective and stable colorations to thermoplastic resins, are easily handled and exhibit desirable migration properties (C4/66-C5/L2). Given that Zhao discloses colorant that is anthraquinone as presently claimed, it is clear that the anthraquinone will intrinsically have chemical affinity for polyethylene terephthalate as presently claimed.

Luka and Zhao are analogous are because both teach about polyethylene terephthalate containers comprising a colorant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the poly(oxyalkene) polymeric colorant comprising anthraquinone of Zhao as the colorant for coating the bottle of Luka to provide a bottle with a colorant that provides effective and stable coloration, is easily handled and exhibits desirable migration properties.

Examiner notes that since Luka in combination with Zhao discloses a molded polyethylene terephthalate container as presently claimed and further given that Zhao discloses that anthraquinone has migration properties, it is clear that the anthraquinone would intrinsically be bound below the surface of the container as the result of migration as presently claimed.

Although modified Luka does not disclose an article produced by the process as claimed, it is noted that "[E]ven though product-by-process claims are limited by and

defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process", *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, "although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product", *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process and given that modified Luka meets the requirements of the claimed product, modified Luka clearly meet the requirements of present claim 60.

Given that Luka discloses coating the exterior surface, it is the Examiner's position that the dye is bound to a specific region of the polyethylene terephthalate container (i.e. the exterior surface) and is bound predominantly to an outside surface of the container and the container is regioselectively contacted with the dye and therefore meets any structural limitations imparted by this process limitation.

7. Claims 18-20, 57, 58, 60, 62 and 63 rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (US 4,991,728) in view of Haigh et al. (US 4,465,728) and Zhao et al. (US6,423,764).

Regarding claims 18-20, 57, 58, 60, 62 and 63, Hayashi discloses a bottle comprising PET (i.e. an article comprising a polyethylene terephthalate container; a

moulded polyethylene terephthalate article; said article comprising a container or container preform) (C2/L65-68).

Hayashi does not disclose providing a coloration zone containing a dispersion in a liquid medium one or more disperse dyes having chemical affinity for polyethylene terephthalate, and in the coloration zone contacting the container or container preform with one or more disperse dyes in a liquid medium for a period of time of about 10 seconds to about 15 minutes after which time the container or preform is removed from the liquid medium and under conditions effective to cause at least a portion of the one or more disperse dyes to migrate from the liquid medium and bind to the polyethylene terephthalate of the container or container preform or an article having an inside surface and an outside surface and a disperse dye having a chemical affinity to polyethylene terephthalate bound predominantly to one, but not the other of said surfaces or wherein the disperse dye is bound below the surface of the container or container preform as a result of migration from a surface point of contact into the material of the polyethylene terephthalate container or container preform or wherein said disperse dye is selected from the group consisting of anthraquinone, indathrone, monazo, diazo, mithine, quinophthalone, perinone, naphthalidimide, thioindigo dyes and combinations thereof or providing a coloration zone containing a dispersion in a liquid medium one or more disperse dyes having chemical affinity for polyethylene terephthalate, and in the coloration zone contacting the container or container preform with one or more disperse dyes in a liquid medium for a period and under conditions effective to cause at least a portion of the one or more disperse dyes to migrate from the liquid medium and bind to

a specific region of the polyethylene terephthalate container or container preform or hat the container or container preform is contacted with one or more disperse dyes so said disperse dye is bound predominantly to one of either an inside surface or an outside surface of the container or container preform or wherein said container or container preform is regioselectively contacted with said one of more disperse dyes in the liquid medium.

Haigh discloses a method of penetrating plastic articles such as bottles with disperse dyes comprising applying heat and pressure to induce sublimation of the dyes from a tri-laminate transfer sheet into the surface of the bottles (i.e. outer surface; regioselectively) (C13/L9-24, abstract), wherein the application of heat and pressure is for a duration of 0.1 to 10 seconds and the tri-laminate transfer sheet is removed from the bottle (i.e. clearly overlapping about 10 seconds to about 15 seconds) (C13/L45-50; C13/L20-25). Alternatively, given that the duration of application of the dye transfer sheet will affect the amount of coloring of the bottle, it is the Examiner's position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the duration depending on how much or how little color is desired in the bottle. Haigh discloses that the process provides bottles with ornamental coloring/designs that are wear and rub proof and that have good clarity definition and intensity (C2/L15-20; C3/L18-25).

Given that Haigh discloses dyeing the exterior surface, it is the Examiner's position that the dye is bound to a specific region of the container (i.e. the exterior surface) and is bound predominantly to an outside surface of the container and the container is

regioselectively contacted with the dye and therefore meets any structural limitations imparted by this process limitation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Haigh on the bottle of Hayashi in order to provide a bottle with ornamental coloring/designs that are wear and rub proof and that have good clarity definition and intensity, which will be attractive to a consumer.

Zhao discloses a bottle made of polyethylene terephthalate (C1/L30-35, C7/L25-30) comprising a poly(oxyalkene) polymeric colorant comprising anthraquinone (C5/L30-35) (i.e. a disperse dye having a chemical affinity for polyethylene terephthalate; anthraquinone). Zhao further discloses that the poly(oxyalkene) polymeric colorant comprising anthraquinone provides effective and stable colorations to thermoplastic resins, are easily handled and exhibit desirable migration properties (C4/66-C5/L2). Given that Zhao discloses colorant that is anthraquinone as presently claimed, it is clear that the anthraquinone will intrinsically have chemical affinity for polyethylene terephthalate as presently claimed.

Modified Hayashi and Zhao are analogous are because both teach about polyethylene terephthalate containers comprising a colorant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the poly(oxyalkene) polymeric colorant comprising anthraquinone of Zhao as the colorant for the bottle of Modified Hayashi in order to provide a bottle with a colorant that provides effective and stable coloration, is easily handled and exhibits desirable migration properties.

Although modified Hayashi does not disclose an article produced by the process as claimed, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process and given that modified Hayashi meets the requirements of the claimed product, modified Hayashi clearly meets the requirements of present claims 18-20, 57, 58, 60, 62 and 63.

Response to Arguments

8. Applicant's arguments, with respect to claims 18, 57, 62 and 63 have been fully considered and are persuasive. The rejections of claims 18, 57, 62 and 63 in view of Zhao and in view of Luka and Zhao have been withdrawn.

9. Applicant's arguments filed 29 September 2010 have been fully considered but they are not persuasive.

Regarding the Declaration of Mark Frost, Applicant argues that given that the coating of Luka is cured and bonded, the disperse dye will be chemically reacted and therefore be covalently bonded to the coating and thus would not penetrate into the PET container.

Applicant's argument is unpersuasive because Applicant provides no evidence that the dye of modified Luka would be covalently bonded to the coating. Luka merely states that the coating is cured, not that the colorant within the coating is cured. Therefore, Examiner's position remains that since Luka in combination with Zhao discloses a molded polyethylene terephthalate container as presently claimed and further given that Zhao discloses that anthraquinone has migration properties, it is clear that the anthraquinone would intrinsically be bound below the surface of the container as the result of migration as presently claimed, absent evidence to the contrary.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES YAGER whose telephone number is (571)270-3880. The examiner can normally be reached on Mon - Fri, 7:30am-5pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY 11/3/10

/Rena L. Dye/
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